Stewardship Notes
Indiana Division of Forestry

Pruning

Production of high value lumber and veneer is characterized by straight, limb-free boles (tree trunks). Natural growth of young hardwoods in dense stands (more than 500 seedlings per acre) tend to produce these boles. The amount of high quality growth can be increased by timely corrective and side limb pruning.

Pruning Tools and Techniques
Recommended tools are pruning saws or long handled pruning shears. A pruning cut should always be made at a branch junction, where the branch "Y's" off from the main stem. For maximum healing of the branch stub, pruning should be done before the branch to be pruned is greater than 2" in diameter. Leave a stub no longer than 1/2". Be careful to not cut into the raised area of the main stem around the branch. An undercut on the branch will prevent the bark from pulling off into the main stem.

Season for Pruning
Pruning can be done at any time and will not kill the tree. However, it is argued that the time of early growth (May-July) may be the best time for pruning since callus tissue formation, and healing, begins immediately. Wounds created in the winter stay open longer and dry out before starting to callus over. On the other hand, bark slips easily from the wood at this time, and risk of fungal infection is at a maximum. Early spring when the tree is still dormant may meet both needs. Treatment of the wounds with a wound dressing has been found to be ineffective.

Corrective Pruning
Corrective pruning in a forest plantation is used for trees with low forks and crooked boles. It is useful only with young trees and can be done when the tree is as young as five years old.

If more than one main stem is present (multiple stems) the best formed stem should be kept and the others pruned close to their point of forking. The point where multiple stemmed trees grow apart is usually weak and will eventually break. Multiple stems usually do not grow vertically, which causes uneven formation of wood on the bole.

Low forks creating two main stems at less than 17'-21' (desirable log length) up the tree are undesirable. Prune the less desirable fork when the tree is young. The slight crook will eventually "fill in" with new wood.

If the main stem of a young seedling (less than 5 years old) is hopelessly crooked, it may be cut off at ground level (coppiced). The resulting sprout is fast growing and usually straight. Multiple sprouts may need to be eliminated. Coppicing is the last resort to save a

seedling, since it is difficult for these trees to catch up with the rest of the stand. This corrective pruning technique can also be used to salvage young trees damaged by ice storms, fires and deer. For deer rubbed trees, and when there is fire damage to the main stem, coppicing to restart the main stem may be the only solution. Pruning ice damaged broken limbs to "train" a new main stem may be helpful.

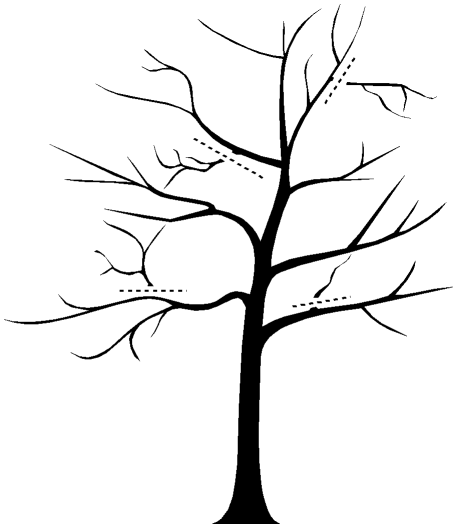
Side Limb Pruning

As a tree grows taller, the lower limbs in the crown become less and less useful and eventually are eliminated by the tree. Some tree species have a strong tendency to self-prune, while others do not. The quicker these limbs are dropped by the tree; the sooner that tree begins to add knot-free wood to the bole. This knot-free wood is worth much more at harvest time!

Growing trees close together in plantations will shade the lower limbs and cause them to be pruned naturally. This is the most economical method of pruning. However, a plantation manager can reduce the time required by timely pruning of lower branches.

Species to Prune

All trees grown for timber (or shade) can benefit from side limb pruning. However, for most species, more money will be spent than can ever be recovered at harvest. Black walnut may be one exception.



Pruning Height

Side limb pruning may begin when the total height of the tree is about six feet. Prune the lower branches until about 1/2 of the total height of the tree is in top. As the tree grows, prune more lower limbs. Time pruning 3-5 years apart. Prune until the bole is the height of a desirable log length, about 12' to 17'. This may require up to 40 years.

Thinning of Plantations

It may be counter productive to prune trees that may later be thinned out of a plantation. Recommended trees planted per acre for hardwood plantations in Indiana is about 500. When these trees reach an average diameter of 12-14 inches DBH (diameter at breast height) only about 100-150 will fit on that acre. It is reasonable for a manager to choose 150-250 trees during the first or second pruning to carry through to harvest. This leaves extra to replace those lost to mortality.

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